BLUE SEAL®

EVOLUTIONSERIES

Pasta Cookers

G47

Service Manual

© Moffat Ltd, January 2007

WARNING: ALL INSTALLATION AND SERVICE REPAIR WORK MUST BE CARRIED OUT BY QUALIFIED PERSONS ONLY.

IMPORTANT: MAKING ALTERATIONS MAY VOID WARRANTIES AND APPROVALS.

© Moffat Ltd, January 2007

Contents

This manual is designed to take a more in depth look at the G47 Pasta Cookers for the purpose of making the units more understandable to service people.

There are settings explained in this manual that should never require to be adjusted, but for completeness and those special cases where these settings are required to change, this manual gives a full explanation as to how, and what effects will result.

Section **Page Number**

1. Specifications.....1

2. Installation.....3

3. Operation.....8

3.1 Description of Controls
3.2 Explanation of Control System

4. Cleaning and Maintenance.....10

4.1 Cleaning
4.2 Routine Maintenance

5. Trouble-shooting Guide.....14

5.1 Trouble-shooting Chart
5.2 Fault Diagnosis

6. Service Procedures.....18

6.1 Access
6.2 Replacement
6.3 Adjustment / Calibration

7. Accessories.....24

8. Exploded Parts Diagrams 25

9. Circuit Schematics.....28

10. Service Contacts.....29

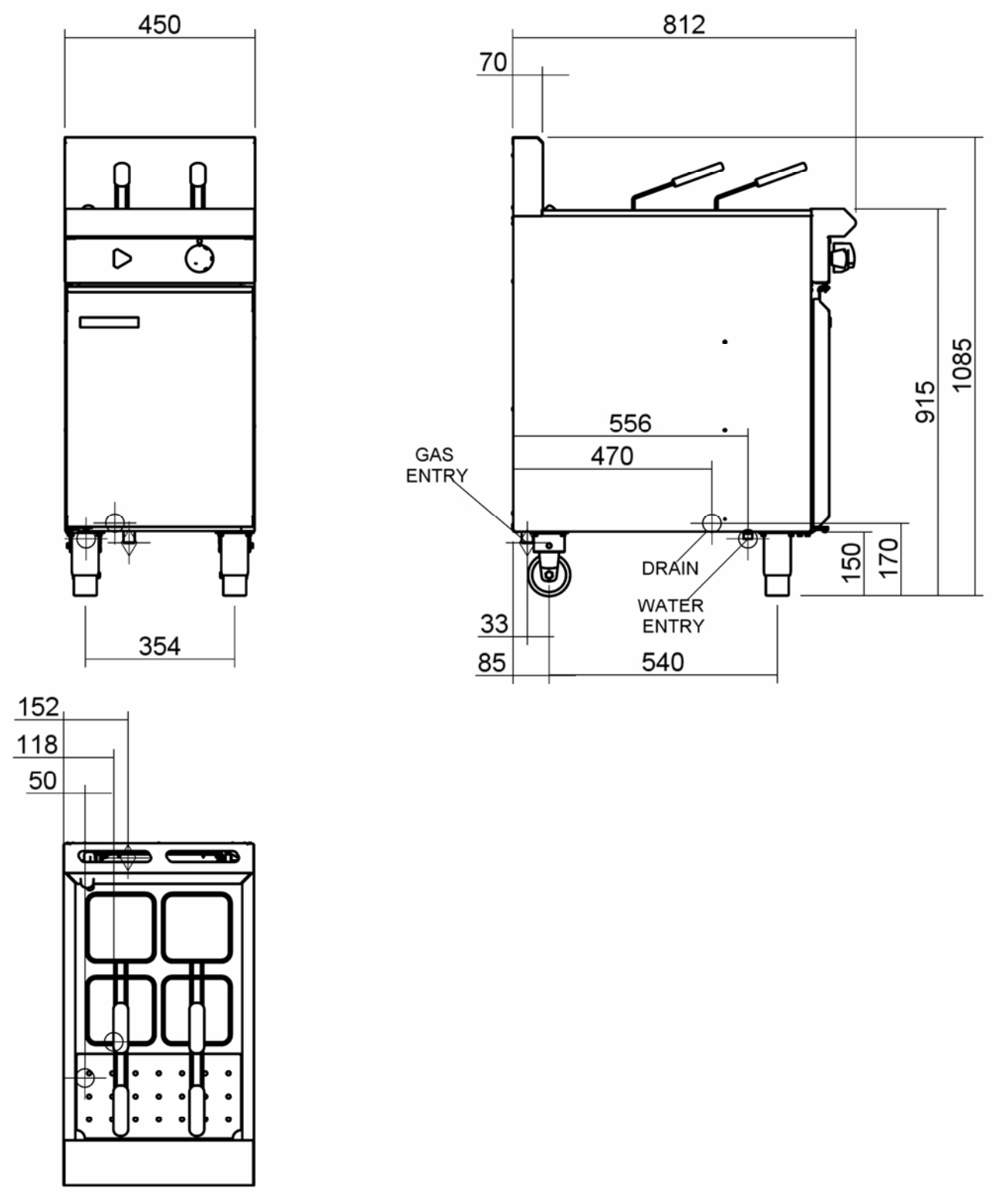
Appendix A: Gas Type Conversion.....31

Appendix B: Gas Specifications.....34

© Moffat Ltd, January 2007

© Moffat Ltd, January 2007

External dimensions: G47



Dimensions shown in millimetres

Legend

GAS - Gas connection entry point - ¾" BSP male

© Moffat Ltd, January 2007

1 Specifications

Gas supply (Non-UK models)

	Natural Gas	LP Gas (Propane)
Input Rating (N.H.G.C.)	46 MJ/hr (44,547 Btu/hr)	47 MJ/hr (44,547 Btu/hr)
Supply Pressure	1.13 - 3.40 kPa (4.5" - 13.5" w.c.)	2.75 - 3.40 kPa (11" - 13.5" w.c.)
Burner Operating Pressure	0.92 kPa (*) (3.7" w.c.)	2.6 kPa (*) (10.2" w.c.)
Gas Connection	¾" BSP Male	

Gas supply (UK models)

	Natural Gas (G20)		Propane (G31)	
	Nominal	Reduced	Nominal	Reduced
Heat Input (nett)	12.0 kW	5.4 kW	12.5 kW	6.2 kW
Gas Rate	1.27 m^3/hr	0.42 m^3/hr	0.97 kg/hr	0.48 kg/hr
Supply Pressure	20 mbar		37 mbar	
Burner Operating Pressure	9.5 mbar (*)		27.7 mbar (*)	
Gas Connection	$^3/_4$" BSP Male			

Injector sizes

	Natural Gas	LPG / Propane
Main Burners	3.10mm	1.90mm
Pilot Burners (Non-UK models)	0.62mm	0.35mm
Pilot Burners (UK models)	0.45mm	0.30mm

Tank capacity

Water capacity	40l
Useable internal dimensions of tank (width x length)	
Useable depth of water	

Water supply

Water connection	½" tube
Maximum water supply pressure	550 kPa (80psi)

© Moffat Ltd, January 2007

Installation Requirements

NOTE:

- **It is most important that this appliance is installed correctly and that operation is correct before use. Installation shall comply with local, gas, health and safety requirements.**
- **This appliance shall be installed with sufficient ventilation to prevent the occurrence of unacceptable concentrations of health harmful substances in the room, the appliance is installed in.**

Blue Seal pasta cookers are designed to provide years of satisfactory service and correct installation is essential to achieve the best performance, efficiency and trouble-free operation.

This appliance must be installed in accordance with National installation codes and in addition, in accordance with relevant National / Local codes covering gas and fire safety.

AUSTRALIA:	- AS5601	- Gas Installations.
NEW ZEALAND:	- NZS5261	- Gas Installation.
UNITED KINGDOM:	- Gas Safety (Installation & Use) Regulations 1998.	
	- BS6173	- Installation of Catering Appliances.
	- BS5440	- Parts 1 & 2 Installation Flueing & Ventilation.
IRELAND:	- IS 820	- Non - Domestic Gas Installations.

Installations must be carried out by qualified service persons only. Failure to install equipment to the relevant codes and manufacturer's specifications shown in this section will void the warranty.

Components having adjustments protected (e.g. paint sealed) by manufacturer, are only allowed to be adjusted by an authorised service agent. They are not to be adjusted by the installation person.

Unpacking

- Remove all packaging and transit protection from the appliance including all protective plastic coating from the door outer panel and exterior stainless steel panels.
- Check equipment and parts for damage. Report any damage immediately to the carrier and distributor.
- Report any deficiencies to the distributor who supplied the appliance.
- Check that the available gas supply is correct to that shown on the rating plate located on the inside of the access door.
- Check that the following parts have been supplied with the appliance:

	G47
Baskets 4	
Basket Trays	1

Location

1. This appliance must be installed in a suitably ventilated room to prevent dangerous build up of combustion products.
2. Installation must allow for a sufficient flow of fresh air for the combustion air supply.

Combustion Air Requirements

	G47
Natural Gas (G20)	13 m^3/hr
LPG/Propane (G31)	13 m^3/hr

3. Position the appliance in its approximate working position.

© Moffat Ltd, January 2007

4. All air for burner combustion is supplied from underneath the appliance. The legs must always be fitted and no obstructions placed on the underside or around the base of the appliance, as obstructions will cause incorrect operation and / or failure of the appliance.
5. Components having adjustments protected (e.g. paint sealed) by manufacturer are only allowed to be adjusted by an authorised service agent. They are not to be adjusted by the installation person.

NOTE: Do not obstruct or block the appliances flue. Never directly connect a ventilation system to the appliance flue outlet.

Clearances

	Combustible Surface	Non Combustible Surface
Left/Right hand side	50 mm	0 mm
Rear	50 mm	0 mm

NOTE:

- **Only non-combustible materials can be used in close proximity to this appliance.**
- **In order to facilitate easy operation, drainage and servicing of the appliance, a minimum of 600 mm clearance should be maintained at the front of the appliance.**

Any gas burning appliance requires adequate clearance and ventilation for optimum and trouble-free operation. The following minimum installation clearances are to be adhered to:

Assembly

This model is delivered completely assembled. Ensure that the adjustable feet / rollers are securely attached.

NOTE:

- **This appliance is fitted with adjustable feet / rollers to enable the appliance to be positioned securely and level. This should be carried out on completion of the gas connection. Refer to the "Gas Connection" section overleaf.**
- **The appliance rear leg housings can be fitted with:-**

  Adjustable feet to assist with levelling of the appliance on uneven floors.

  Rear rollers to enable the appliance to be easily moved for positioning and cleaning purposes.

Optional Accessories (Refer to Replacement Parts List)

© Moffat Ltd, January 2007

Fitting of Adjustable Feet / Rear Rollers to the Pasta Cooker

This appliance rear leg mount housings can be fitted with:-

Adjustable feet to assist with levelling of the appliance on uneven floors.
Rear rollers to enable the appliance to be easily moved for positioning and cleaning purposes.

Rear Adjustable Legs, fitting:-

1. Raise the appliance from the floor by approximately 75 mm using suitable lifting equipment (i.e. Palletiser / Forklift) to allow the rear rollers to be removed.
2. Unscrew and remove the securing bolt that secures the rear roller to the rear leg housing.
3. The rear rollers will drop freely from the rear leg housings.
4. Screw the rear adjustable feet into the rear leg housings and tighten hand tight.
5. Lower the appliance back to the floor and adjust the adjustable feet to level the appliance.

Rear Rollers, fitting:-

1. Raise the appliance from the floor by approximately 75 mm using suitable lifting equipment (i.e. Palletiser / Forklift) to allow the rear adjustable feet to be removed.
2. Unscrew and remove both the rear adjustable feet from the rear leg housings.
3. Fit the rear roller to the rear leg housing and align the screw hole in the side of the rear leg housing with the threaded hole in the rear roller.
4. Locate the rear roller to the leg support with the bolt supplied and tighten the bolt using a 10 mm A/F spanner.
5. Fit the second roller and tighten.
6. Lower the appliance back to the floor and adjust the front adjustable feet to level the appliance.

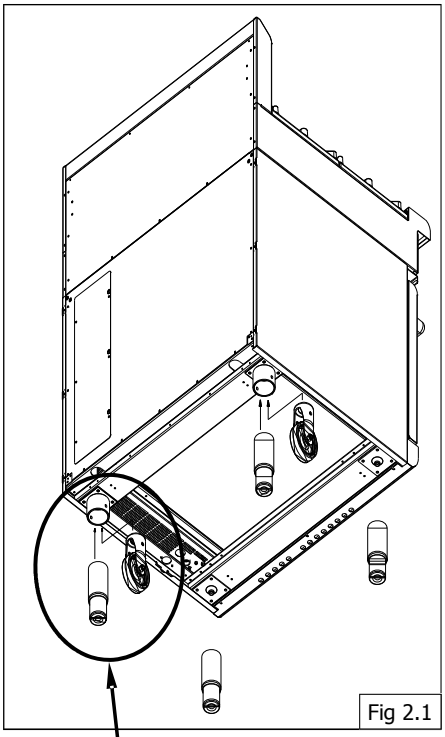
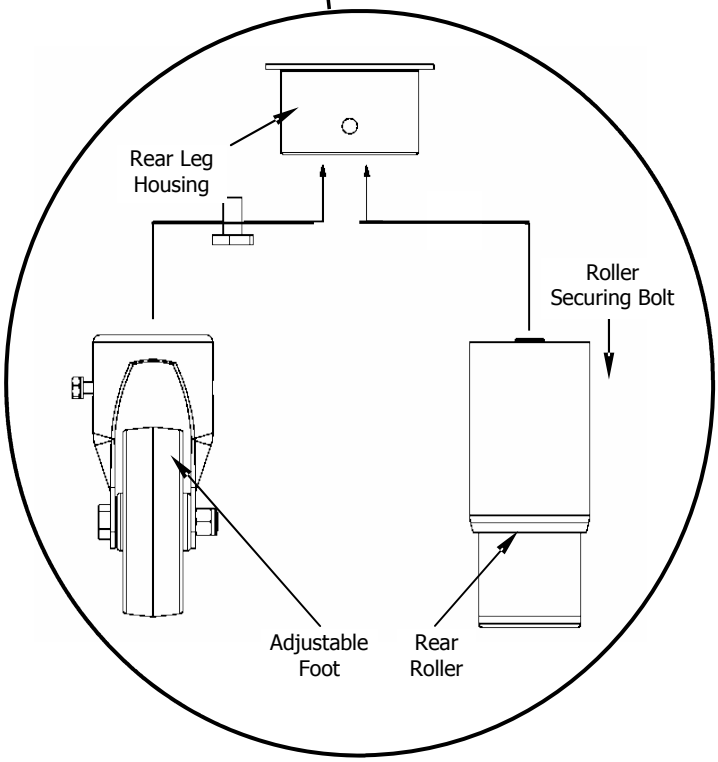


Fig 2.1



© Moffat Ltd, January 2007

2 Installation

Gas Connection

NOTE: ALL GAS FITTING MUST ONLY BE CARRIED OUT BY A QUALIFIED SERVICE PERSON.

1. Blue Seal Pasta Cookers do not require an electrical connection, they function totally on the gas supply only.
2. It is essential that the gas supply is correct for the appliance to be installed and that adequate supply pressure and volume are available. The following checks should therefore be made before installation:-
   a. **The Gas Type** the appliance has been supplied for is shown on coloured stickers located above the gas entry point and next to the rating plate. Check that this is correct for the gas supply the appliance is being installed for. The gas conversion procedure is detailed in this manual.
   b. **Supply Pressure** required for this appliance is shown in the "Specifications" section of this manual. Check the gas supply to ensure that adequate supply pressure exists.
   c. Input Rate of this appliance is also stated on the Rating Plate fitted to the inside of the access door and in the "Specifications" section of this manual. The input rate should be checked against the available gas supply line capacity. **Particular note should be taken if the appliance is being added to an existing installation.**

Fig 2.2

NOTE: It is important that adequately sized piping runs directly to the connection joint on the appliance, with as few tees and elbows as possible to give maximum supply volume.

3. A suitable joining compound which resists the breakdown action of LPG must be used on every gas line connection, unless compression fittings are used.
   The connection to the appliance is $^{3}/_{4}$" BSP male.

NOTE: A Manual Isolation Valve must be fitted to the individual appliance supply line.

4. Correctly locate the appliance into its final operating position and using a spirit level, adjust the legs so that the unit is level and at the correct height.
5. Connect the gas supply to the appliance.
6. Check gas operating pressure to as shown in the "Specifications" section. If the pressure is incorrect, adjust the pressure by adjusting the regulator screw of the gas control valve as shown in the 'Gas Conversion and Specifications' section.

WARNING:

DO NOT USE A NAKED FLAME TO CHECK FOR GAS LEAKAGES .

7. Check all gas connections for leakages using soapy water or other gas detecting equipment.

NOTE: The operating pressure is to be measured at the Burner Operating Pressure test point on the gas control valve, this is to be carried out with the burner operating at the 'High Flame' setting. The operating pressure is ex-factory set, through the appliance regulator and not to be adjusted, apart from when carrying out gas conversion, if required. Refer to the 'Gas Conversion and Specification' Section for further details .

© Moffat Ltd, January 2007

8. Turn 'OFF' the mains gas supply and bleed the gas out of the appliance gas lines.
9. Turn 'ON' the gas supply and the appliance.
10. Verify the operating pressure remains correct
11. Check the pilot flame size. (Re-adjust if required by changing the pilot injector. Refer to the Gas Conversion Section).

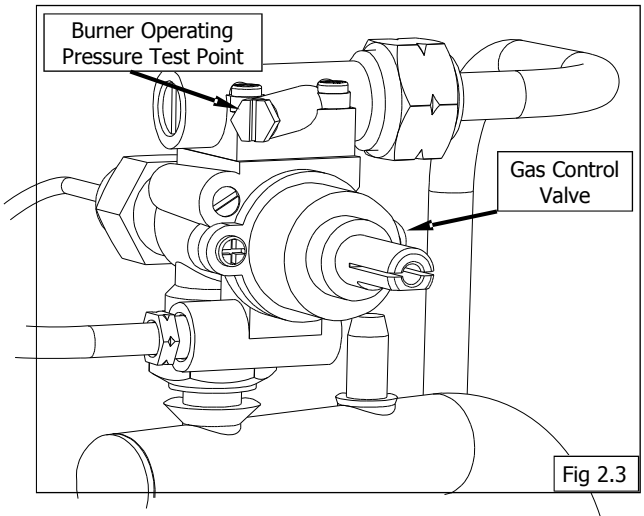


Fig 2.3

Water Connection

NOTE: The water connection shall be installed in accordance with local water regulations in force and the applicable standard/code, e.g. EN 1717 in UK / Ireland, PCA in Australia.

A cold water supply must be connected to the water inlet connection (R $^1/_2$" BSP), located 50 mm from the LH side, 555 mm from rear and 135 mm from the floor.

The water inlet pressure must be as follows:-

Minimum water supply pressure 150 kPa (22 psi).
Maximum water supply pressure 250 kPa (36 psi).

Drainage Connection

- The water is drained from the appliance by means of a valve located behind the front control panel.
- A waste water tundish must be fitted below the appliance drain outlet. This should be a minimum of 127 mm (5") major diameter.
- If required the drain outlet can be extended in order to exit above the tundish. All drain piping must be with materials suitable for conveying boiling water.
- Drain connection is R1" BSP drain / overflow.

Commissioning

The following commissioning checks must be carried out before the pasta cooker is handed over for use, to ensure that the unit operates correctly and the operator(s) understand the correct operating procedure.

1. Before leaving the new installation;
   a. Check the following functions in accordance with the operating instructions specified in the "Operation" section of this manual.
      - Light the Pilot Burner.
      - Light the Main Burner.

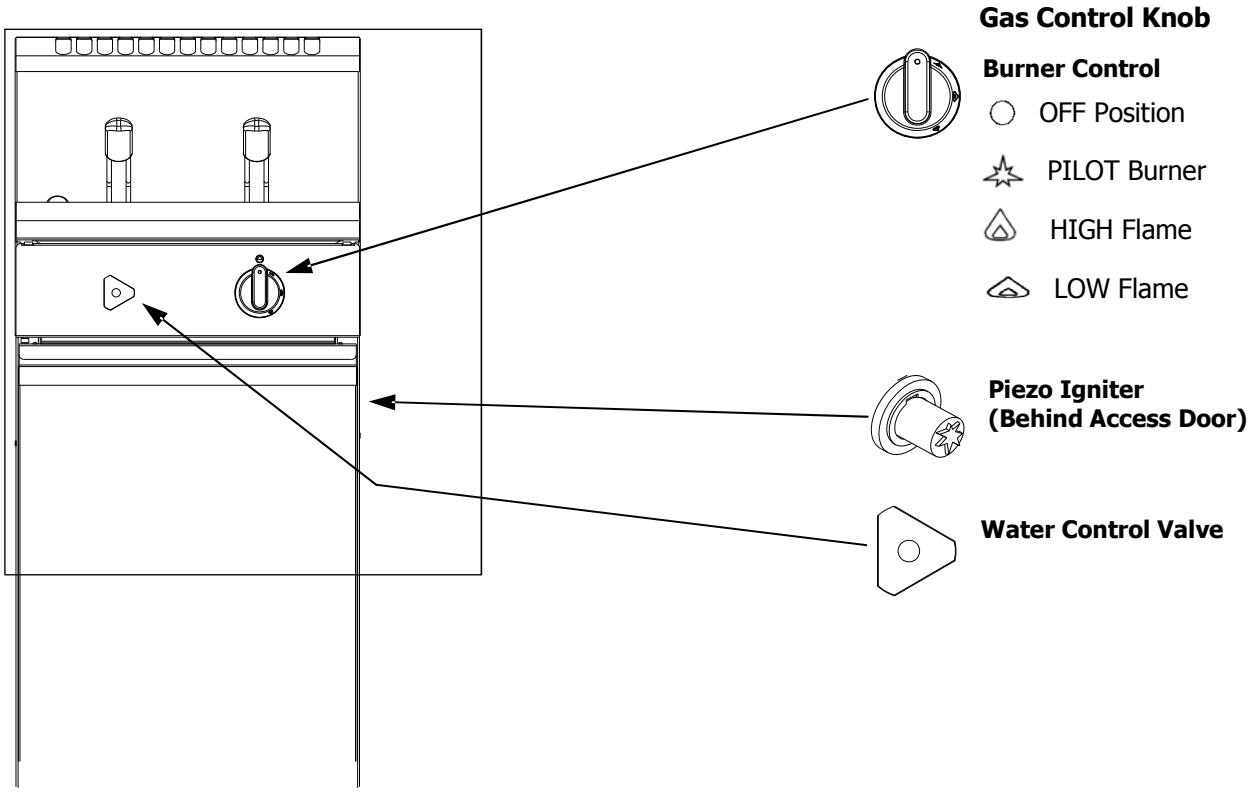
   b. Ensure that each operator has been instructed in the areas of correct lighting, operation, and shutdown procedures for the appliance.
2. This manual must be kept by the owner for future reference and a record of **Date of Purchase**, **Date of Installation** and **Serial Number of Unit** recorded and kept with this manual. **(These details can be found on the Rating Plate attached to the inner R/H side of the front access door panel. Refer to Figure 1 in the 'Installation' section).**

NOTE: If for some reason it is not possible to get the appliance to operate correctly, shut off the gas supply and contact the supplier of this unit.

© Moffat Ltd, January 2007

3 Operation

3.1 Description of controls



© Moffat Ltd, January 2007

3.2 Explanation of Control System

Safety System

The purpose of the safety system is to shut off the flow of gas if the pilot flame goes out. It is comprised of the flame itself, the thermocouple, and the flame failure gas valve.

The pilot flame is lit by holding in the gas control knob, which in turn temporarily pushes the plunger inside the safety valve open and allows gas to flow through. Once the burner is lit, the thermocouple will begin to generate millivolts (after about 10 to 30 seconds of being heated) and will energize the electromagnet inside the gas valve. Once energized the electromagnet holds the plunger inside the gas valve in the open position. The plunger has to have been pushed all the way in for the electromagnet to be able to hold it in place. If the burner flame goes out for some reason, the thermocouple will cool after about 10 to 30 seconds and stop generating millivolts. The electromagnet will then de-energize, and the plunger will snap shut, cutting off the flow of gas.

Detail of each component in the safety system is explained below.

Thermocouple

The thermocouple is a device that generates electricity when heat is applied to the tip.

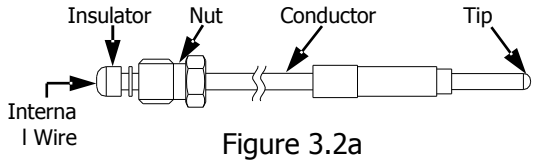


Figure 3.2a

The tip of the thermocouple is located in the pilot burner flame, and the nut at the other end of the thermocouple screws into the back of the gas valve. Inside the copper tubing is a wire which is joined at the tip but insulated from the rest of the tubing. These two parts (the copper tubing and wire) make up the "wiring" for an electrical circuit. When these two dissimilar metals, wire and tip, are heated an electrical voltage is produced. This type of thermocouple generates between 7 and 30 millivolts when heated in the pilot flame.

Electromagnetic Flame Failure Gas Valve

The purpose of the safety valve is to shut off the flow of gas if the pilot flame goes out.

Inside the body of the gas valve is an electromagnet connected to a spring loaded plunger. When the electromagnet is energized, it holds the plunger in, allowing gas to flow through the valve. When the electromagnet is de-energized, the plunger snaps to the closed position, stopping the flow of gas.

Millivolts are provided to the electromagnet by the thermocouple (not shown) which generates millivolts when heated. The thermocouple screws

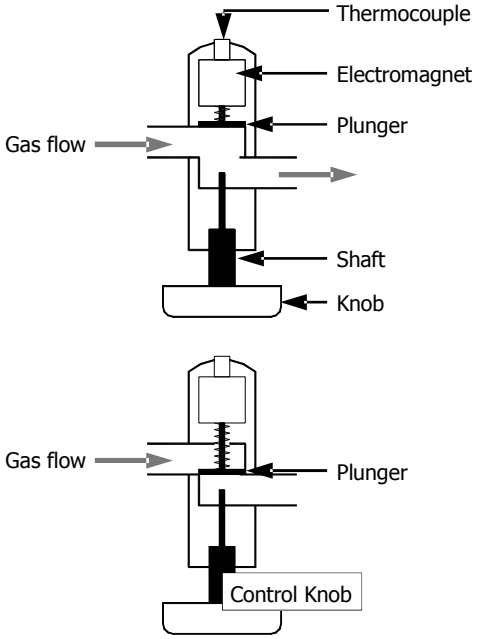


Figure 3.2b

into a fitting at the back of the gas valve to make an electric connection. By pressing in the gas control knob, the plunger can be temporarily held open while lighting. There's two reasons for this; gas has to flow through the safety valve to make it possible to light the pilot burner, and secondly the plunger has to be pushed all the way in for the electromagnet to hold it in. I.e.; the electromagnet is strong enough to hold the plunger in once there, but is not strong enough to pull it in by itself. Sometimes a problem with the flame not staying lit after releasing the button can be attributed to not pushing the plunger all the way in.

This millivolt circuit is interrupted by a safety cut-out thermostat. If the cut-out trips it cuts the millivolt supply to the pilot valve magnet, thereby shutting off the burners. The pasta cooker is then inoperable until the cut-out has cooled below 100°C. The purpose of this is to shut off the burners should the tank run dry.

The Troubleshooting Guide (Section 5) should be used to identify any incorrect operation. On correct identification of the operating fault the Troubleshooting Guide will make reference to the corrective action required, or refer to the Fault Diagnosis section and/or Service section to assist in correction of the fault.

© Moffat Ltd, January 2007

4 Cleaning / Maintenance

4.1 Cleaning

WARNING:

DO NOT USE FLAMMIBLE SOLVENTS AND CLEANING AIDS ON OR IN CLOSE PROXIMITY TO THE PASTA COOKER WHILST THE COOKER IS STILL HOT.

CAUTION:

Always turn off the gas supply at the mains supply before cleaning.
This appliance is not water proof.
Do not use water jet spray to clean interior or exterior of this appliance.

General

Clean the pasta cooker regularly. A clean pasta cooker looks better, will last longer and will perform better. A dirty pasta cooker will hinder the transfer of heat from the cooking surface to the food. This will result in loss of cooking efficiency.

CAUTION:

If cleaning detergents are allowed to enter the inner parts of the appliance, rusting will occur on the pipe work, installation elements, heating elements, gas fittings and electrical components, this will cause premature failure of the appliance.

NOTE:

- **DO NOT clean the appliance using high pressure water or steam jets.**
- **DO NOT pour water directly over the appliance.**
- **DO NOT use wire brushes. Clean the pan regularly after each use.**
- **DO NOT use combustible liquids to clean the appliance.**
- **DO NOT use harsh abrasive detergents, sharp scrapers, strong solvents or caustic detergents as they will damage the appliance.**
- **DO NOT use any chloric or bleaching detergents to clean the appliance.**
- **Ensure that any detergent or cleaning material have been completely removed after each cleaning.**
- **DO NOT use saline or sulfuric acid preparations for descaling the appliance.**
- **Ensure that protective gloves are worn during the cleaning process.**
- **Clean the pan regularly after each use.**

Draining and Cleaning

Opening the Drain Valve

a. Lift the locking slide on valve handle (Fig 4.1a) to release the valve.

b. While holding the locking slide in the withdrawn position, rotate the handle anticlockwise (Fig 4.1b) to open the valve.

c. When the valve is closed, slide the locking slide down over the locking valve to prevent accidental opening of the valve as shown in Fig 4.1a.

© Moffat Ltd, January 2007

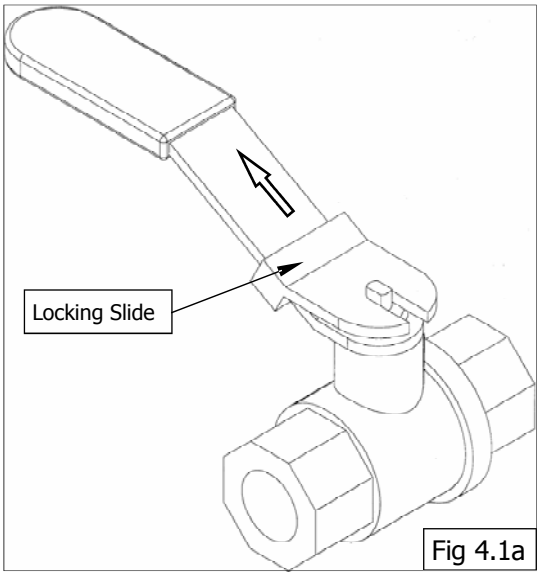


Fig 4.1a

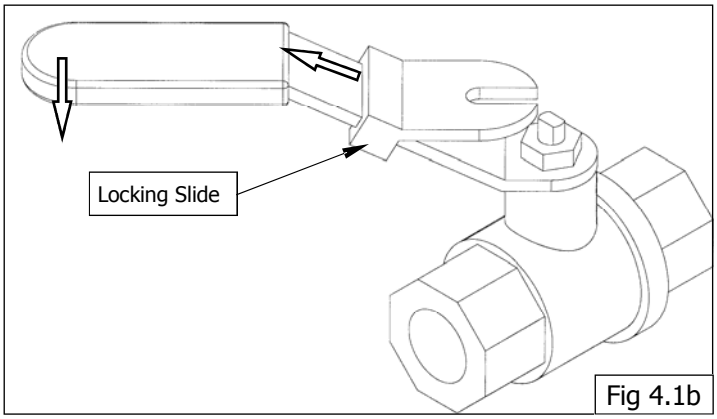


Fig 4.1b

After Each Use

WARNING:

HOT WATER WILL SCALD - DO NOT RUSH THIS JOB.

1. Clean the interior of the pan regularly after each use. Do not use wire brushes on the pan. Clean using a mild detergent and a hot water solution using soft cloth or a soft bristled brush. Dry the appliance thoroughly using a dry clean cloth.

Daily Cleaning

WARNING:

DO NOT ATTEMPT TO MOVE THE PASTA COOKER WHILST THE COOKER IS FULL OF WATER.

BEFORE ATTEMPTING TO MOVE THE PASTA COOKER, ENSURE THAT ALL THE WATER HAS BEEN DRAINED FROM THE TANK. REFER TO THE INFORMATION ON THE PREVIOUS PAGE ON HOW TO DRAIN THE WATER FROM THE PASTA COOKER.

1. The water should be drained and re-filled regularly. Open the drain valve slowly to minimise splashing. Waste water will drain into the tundish fitted below the appliance drain outlet.
2. When the tank is empty, open the drain valve fully and check for any particles or residue lodged in the valve. Clean out with a stiff nylon brush. Do not use wire brush or metal rods as these damage the seating in the valve and will eventually lead to valve leakage.
3. If the obstruction in the valve cannot be removed with a brush, use a wooden probe to dislodge any obstruction.
4. Clean the interior and exterior of the pan regularly at the end of each day. Do not use wire brushes on the pan. Clean using a mild detergent and a hot water solution using soft cloth or a soft bristled brush. Dry the appliance thoroughly using a dry clean cloth.
5. Once the daily cleaning operation is completed, ensure that the drain valve has been closed.
6. At the end of each day or at the end of each shift, clean the exterior of the pasta cooker using a mild detergent and a hot water solution using soft cloth or a soft bristled brush.

© Moffat Ltd, January 2007

4 Cleaning / Maintenance

Weekly Cleaning

WARNING:

DO NOT ATTEMPT TO MOVE THE PASTA COOKER WHILST THE COOKER IS FULL OF WATER.

BEFORE ATTEMPTING TO MOVE THE PASTA COOKER, ENSURE THAT ALL THE WATER HAS BEEN DRAINED FROM THE TANK. REFER TO THE INFORMATION ON THE PREVIOUS PAGE ON HOW TO DRAIN THE WATER FROM THE PASTA COOKER.

NOTE:

- **If the pasta cooker usage is very high, we recommend that the weekly cleaning procedure is carried out on a more frequent basis.**
- **Ensure that protective gloves are worn during the cleaning process.**
- **DO NOT use harsh abrasive detergents, strong solvents, sharp scrapers or caustic detergents as they will damage the surface of the pasta cooker.**
- **Ensure that the water circuit is free of ferrous particles. Any such particles deposited in the bottom of the tank may cause it to rust.**

Thoroughly clean the interior and exterior of the pasta cooker regularly. Do not use wire brushes on the pan. Clean using a mild detergent and a hot water solution using soft cloth or a soft bristled brush. Dry the appliance thoroughly using a dry clean cloth.

NOTE: In order to prevent the forming of rust on the steel components, ensure that the detergent or cleaning material has been entirely removed after each cleaning process.

Stainless Steel Surfaces

a. Clean the interior and exterior surfaces of the pasta cooker with hot water, a mild detergent solution and a soft scrubbing brush. Note that the gas control knobs are a push fit onto the gas and water control valve spindles and can be removed to allow cleaning of the front of the control panel.

b. Baked on deposits or discolouration may require a good quality stainless steel cleaner or stainless steel wool. Always apply cleaner when the appliance is cold and rub in the direction of the grain.

c. Dry all components thoroughly with a dry cloth and polish with a soft dry cloth.

Periodic Maintenance

NOTE: All maintenance operations should only be carried out by a qualified service person.

To achieve the best results cleaning must be regular and thorough and all controls and mechanical parts should be checked and adjusted periodically by a qualified service person. If any small faults occur, have them attended to promptly. Don't wait until they cause a complete breakdown. It is recommended that the appliance is serviced every 6 months.

If the appliance is not used for long periods, close the gas shut-off valve upstream of the appliance and clean the appliance thoroughly.

The appliance should be inspected and the gas exhaust flue cleaned by an authorized service person at least every 6 months.

© Moffat Ltd, January 2007

4.2 Routine Maintenance

BLUE SEAL PASTA COOKERS - MAINTENANCE SCHEDULE

Business Name and Address:	
Date:	Service Report No.
Phone:	Fax:
	Serial No:
Clients Order No.	Serviceman:

Model: Blue Seal G47			Remarks
1	Inspect exterior condition of unit.		
2	Check working gas pressure, correct to rating plate		Pressure kPa
3	Check for gas leaks		
4	Check pilot flame, adjust as required		
5	Check burner operation		
6	Inspect thermocouple		
7a	Check millivolt of thermocouple to safety cut-out		mV
7b	Check millivolt of thermocouple to valve		mV
8	Inspect is clean and free from blockages		
9	Check piezo ignition of pilot		
10	Check flue for build up of foreign objects		
Service Comments:			
Additional work/repairs required:			
Customers approval: Name (print): Title: Customers signature: Date:			

Suggestion: Photocopy this form and keep on file for continued use.

© Moffat Ltd, January 2007

5 Trouble-shooting

WARNING: ALL INSTALLATION AND SERVICE REPAIR WORK MUST BE CARRIED OUT BY QUALIFIED PERSONS ONLY.

5.1 Trouble shooting chart

Fault	Possible Cause	Remedy
Piezo ignitor not sparking	Short in high tension lead. **(Refer fault diagnosis 5.2.2)**	Replace lead. **(Refer service section 6.2.11)**
	Piezo faulty. **(Refer fault diagnosis 5.2.2)**	Replace piezo. **(Refer service section 6.3.10)**
Pilot won't light	No gas supply	Ensure gas is connected and on and bottles not empty.
	Gas pressure too low.	Check gas supply pressure. **(Refer specifications section)**
	Knob on gas control won't go fully in.	Remove obstruction. Correct control / wrapper mounting.
		Replace gas control. **(Refer service section 6.3.10)**
	Blocked pilot spud.	Clean or replace pilot spud. **(Refer service section 6.2.3)**
Pilot goes out when knob released	Releasing knob before the thermocouple heated.	Hold control in for longer (10 s), see if pilot will stay lit.
	Pilot flame too small. **(Refer fault:Pilot Flame small)**	Correct fault.
	Thermocouple faulty. **(Refer fault diagnosis 5.2.1)**	Replace thermocouple. **(Refer service section 6.2.1)**
	Safety cut-out thermostat faulty. **(Refer fault diagnosis 5.2.1)**	Replace safety cut-out thermostat. **(Refer service section 6.2.5)**
	Gas control valve faulty	Replace gas control magnet
Pilot flame small	Gas pressure too low.	Check gas supply pressure. **(Refer specifications section)**
	Pilot injector restricted.	Clean pilot injector. **(Refer service section 6.2.3)**

© Moffat Ltd, January 2007

Fault	Possible Cause	Remedy
Pilot goes out when main burner comes on	Incorrect gas pressure.	Check supply / adjust pressure. **(Refer specifications section)**
	Faulty gas control.	Replace gas control. **(Refer service section 6.2.8)**
Pilot goes out while in use.	Gas supply - incorrect or fluctuating pressure.	Check supply / adjust pressure.
	Draught at installation (blowing pilot out).	Shield pasta cooker from excessive breeze
	Thermocouple faulty. **(Refer fault diagnosis 5.2.1)**	Replace thermocouple. **(Refer service section 6.2.1)**
	Safety cut-out thermostat faulty. **(Refer fault diagnosis 5.2.1)**	Replace safety cut-out thermostat. **(Refer service section 6.2.5)**
	Main gas control valve faulty.	Replace gas control magnet.
Main burner will not light	Incorrect supply pressure.	Check supply correct pressure.
	Wrong size or blocked injector.	Replace / clean injector. **(Refer service section 6.2.6)**
	Small pilot flame. **(Refer fault:Small Pilot Flame)**	Correct fault.
	Faulty gas control. **(Refer fault diagnosis 5.2.3)**	Replace gas control. **(Refer service section 6.2.8)**
Pilot flame yellow / lazy	Gas pressure incorrect.	Check gas supply pressure. **(Refer specifications section)**
	Restriction in pilot spud or aeration.	Clean or replace as required. **(Refer service section 6.2.3)**
Burner does not burn correctly (roar / light back / incorrect colour)	Incorrect supply pressure.	Check supply pressure.
	Incorrect injector size.	Check injector size and replace if necessary. **(Refer service section 6.2.3)**
	Burner faulty.	Replace burner. **(Refer section 6.2.8)**

© Moffat Ltd, January 2007

5.2 Fault Diagnosis

5.2.1 Pilot drops out

Pilot flame too small

If the pilot can be lit but the flame is too small to impinge on the thermocouple, then check the gas pressure. If ok, then remove the pilot injector from the pilot burner and check for blockages and/or correct size.

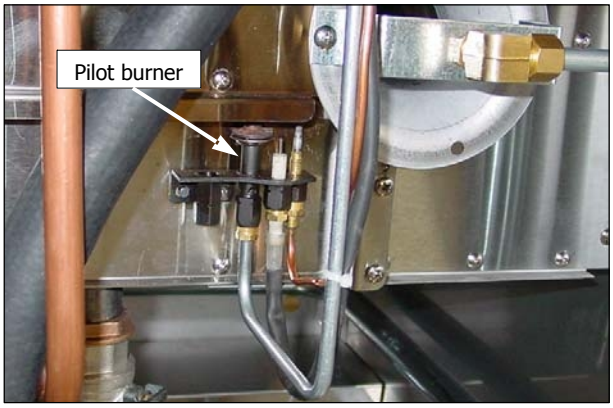


Figure 5.2.1a

Thermocouple faulty

Check the thermocouple connection is firm and the safety cut-out lead connection to the inter-rupter block on the thermocouple is secure. (Loose connections will cause resistance in millivolt circuit and result in pilot outage.

If all connections OK, then light the pilot, and whilst holding the control knob in, measure the voltage from the pilot side of the connecter block to earth (e.g the body of the control valve). This should read approximately 30mV. If this reading is less than 20mV and there is good impingement of the pilot flame onto the thermocouple, then the thermocouple is faulty - replace.

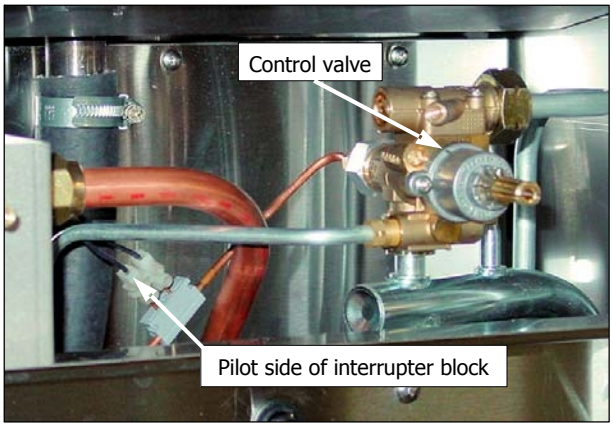


Figure 5.2.1b

Safety cut-out tripped

The safety cut-out is set at 115 °C. If there is water in the tank and the safety cut-out has tripped (open circuit) then the safety cut-out is faulty.

Safety cut-out faulty

To check if the safety cut-out is faulty hold in the gas control button and light the pilot (leaving the control button depressed to keep the pilot alight). With a multimeter measure the voltage from the gas control side of the thermocouple interrupter block to earth. If the voltage is under 5mV (and the thermocouple is generating at least 20mV) then the safety cut-out is faulty—replace. If all of the above checks out ok then check gas control or thermocouple.

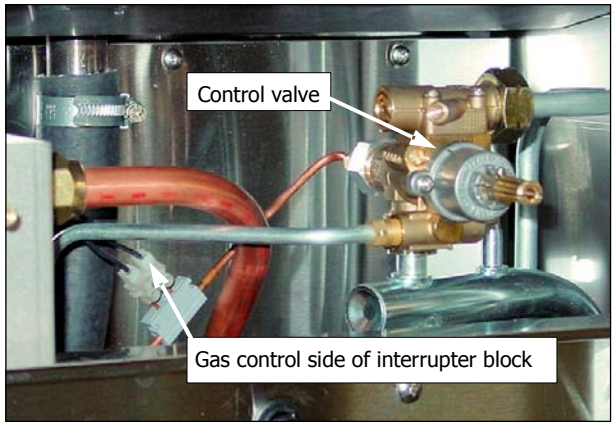


Figure 5.2.1d

5.2.2 Piezo ignitor not sparking

Short in high tension lead

If repeated sparking of the piezo shows only intermittent sparking at the electrode, then the lead should be traced to find area of short. This can be visually seen as the spark arks. If the lead is shorting the best solution is to replace it, as the electrical insulation of the lead may have deteriorated.

If the spark arc can be seen at the electrode in-sulator at the pilot burner instead of at the electrode tip, then the insulator probably has a fracture and should be replaced

© Moffat Ltd, January 2007

Piezo ignitor faulty

If no spark at all can be generated, remove piezo ignitor and hold close to cabinet body . Depress piezo ignitor and if a spark cannot be generated to the cabinet body the piezo ignitor is faulty and should be replaced.

Note: If piezo ignition fails, the pilot can be manually lit in the interim until the piezo circuit is repaired. A standard taper torch ,lighter or matches can be used for manual back–up ignition.

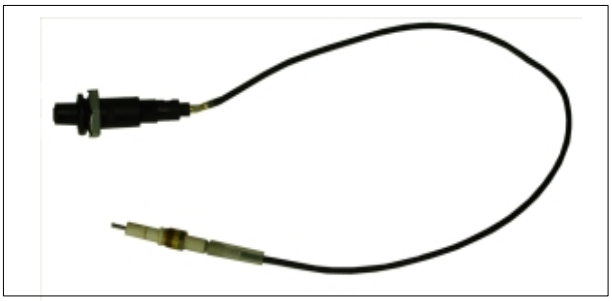


Figure 5.2.2

© Moffat Ltd, January 2007

6 Service Procedures

Section **Page Number**

6.1 Access.....19

6.1.1 Control Panel.....19

6.2 Replacement.....19

6.2.1 Thermocouple 19
6.2.3 Pilot Injector.....20
6.2.4 Pilot Burner.....20
6.2.5 Safety Cut-out Thermostat 20
6.2.6 Main Burner Injector.....20
6.2.7 Main Burner.....21
6.2.8 Gas Control Valve 22
6.2.9 Piezo Ignition Electrode 22
6.2.10 Piezo Ignitor.....22
6.2.11 High Tension Lead.....22

6.3 Adjustment / Calibration.....23

6.3.1 Gas Control Valve Re-greasing.....23
6.3.2 Low Fire Adjustment.....23

WARNING:

ALL INSTALLATION AND SERVICE REPAIR WORK MUST BE CARRIED OUT BY QUALIFIED PERSONS ONLY.

ENSURE GAS SUPPLY IS SWITCHED OFF BEFORE SERVICING

ALWAYS CHECK / TEST FOR GAS LEAKS AFTER SERVICE REPAIRS ON THE GAS SYSTEM

© Moffat Ltd, January 2007

6.1 Access

6.1.1 Control panel

1) Remove gas control knob by pulling knob from valve.
2) Remove water valve knob by levering out plastic cap in centre of knob and undoing centre screw.

Figure 6.1.1a

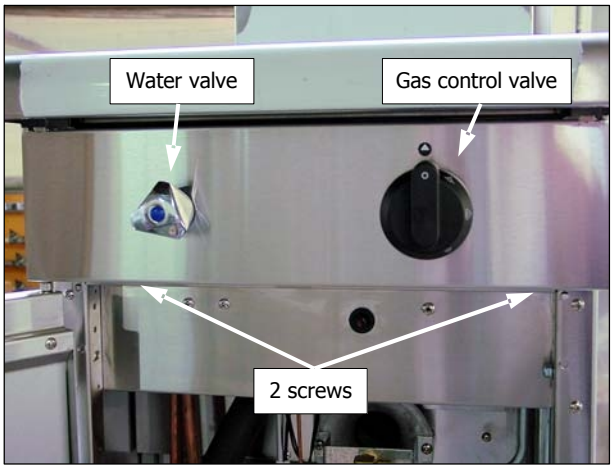


Figure 6.1.1b

3) Remove 2 screws from underside of control panel and lift panel off.

6.2 Replacement

6.2.1 Thermocouple

1) Disconnect thermocouple from gas control.

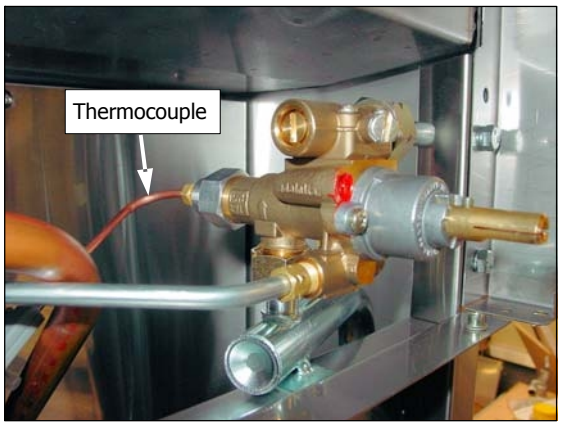


Figure 6.2.1a

2) Unscrew the safety cut-out thermostat wires from the connector block on the thermocouple.
3) Unscrew thermocouple securing nut from pilot burner.

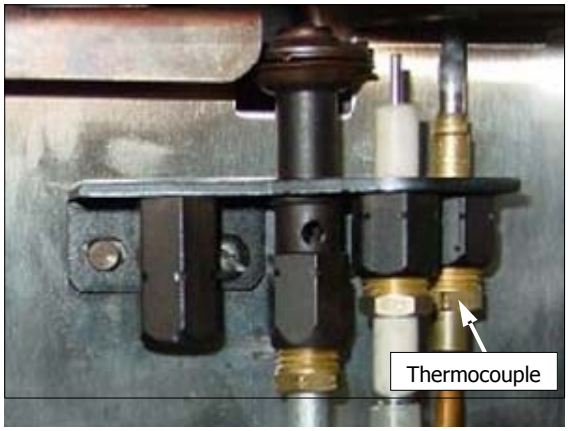


Figure 6.2.1b

Note: It may be necessary to remove the piezo ignition electrode from the pilot assembly before removing thermocouple.

4) Replace thermocouple and reconnect.

When screwing thermocouple back into gas control, once thread has tightened up tighten another ¼ turn only. Do not over tighten.

© Moffat Ltd, January 2007

6.2.3 Pilot injector

1) Remove ignition electrode.
2) Disconnect pilot supply tube from pilot burner by unscrewing nuts and olive.

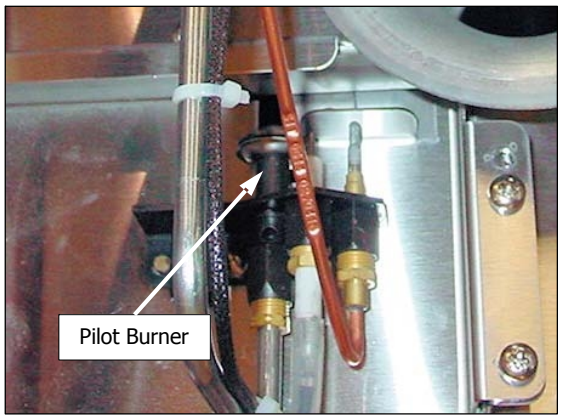


Figure 6.2.3

3) Remove pilot injector, and clean or replace as necessary.

   Note: Ensure correct size injector is used (refer specifications section).

4) Reassemble in reverse order.

6.2.4 Pilot burner

1) Disconnect the thermocouple and/or the piezo electrode from the pilot burner.
2) Disconnect pilot supply tube from pilot burner by unscrewing nut and olive.

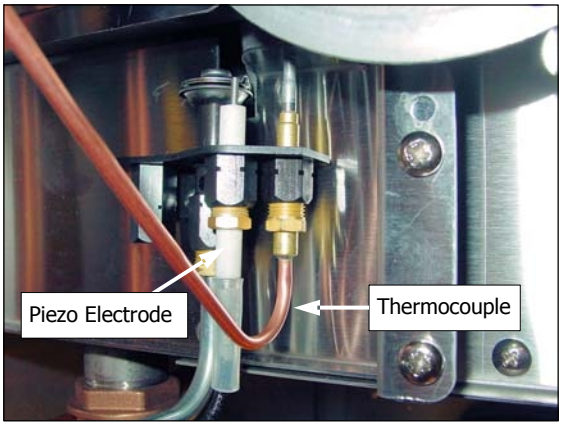


Figure 6.2.4

3) Remove screw securing the pilot burner to front of the pasta cooker, and remove pilot burner assembly.
4) Replace pilot burner and reassemble. Ensure correct pilot injector is refitted (refer to the specifications section).

6.2.5 Safety cut-out thermostat

1) Drain water from pasta cooker.
2) Remove control panel (refer 6.2.1)
3) Disconnect safety cut-out leads from interrupter on the thermocouple.

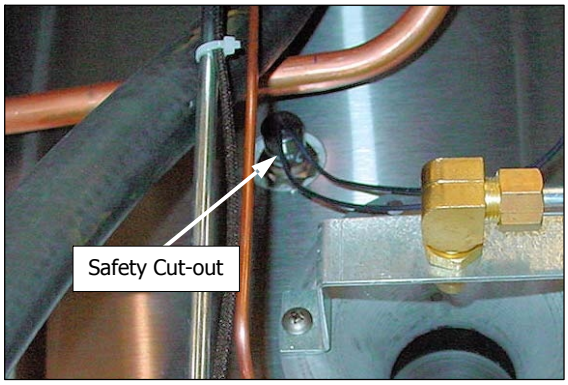


Figure 6.2.5

4) Using $^{7}/_{8}$" tube spanner, remove the safety cut-out thermostat from fryer tank.
5) Replace and reassemble in reverse order, using sealant suitable for 115 °C on threads (locktite 567 recommended).

6.2.6 Main injector

1) Unscrew injector out of injector mounts.
2) Remove injector, and clean or replace as necessary. Ensure correct size of injectors are refitted (refer specifications section)

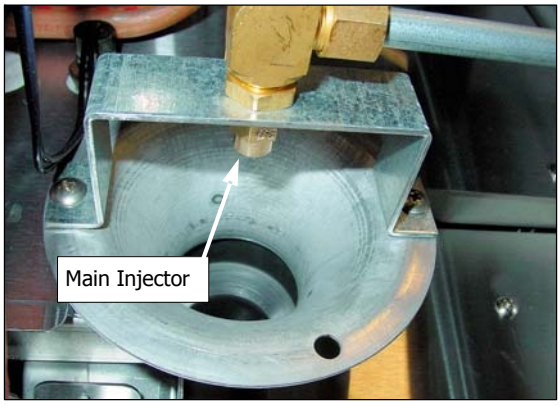


Figure 6.2.6

© Moffat Ltd, January 2007

6.2.7 Main burners

1) Unscrew 3 screws from pilot mounting bracket.
2) Unscrew (6 screws) burner box underside panel.
3) Unscrew and remove corner support panel from underside of burner intake throat (2 screws)

NOTE: There may be a tie wire located at the rear of the burner. This can be cut with a pair of cutters, and discard.

Burner can be removed by dropping down front of burner and pulling forward.

4) With the burner out, the tank underside should be checked to ensure that the black emissivity coating is still intact. There should be no shiny stainless steel of the tank exposed, or white substance on the black surface. Clean the surface if required and remove any loose coating.

NOTE: If touch up or recoat is required, use a spray can of **matt black high temperature enamel** (VHT1200 or equivalent) to re-coat the affected area.

5) Holding the new burner with one hand underside and the other holding the throat, push up the rear of the burner until it positions on the rear support bracket within the burner box. It is a good practice to put your head down and have a look at this bracket before trying too install a burner so that you can visualise where the bracket is when fitting the burner.

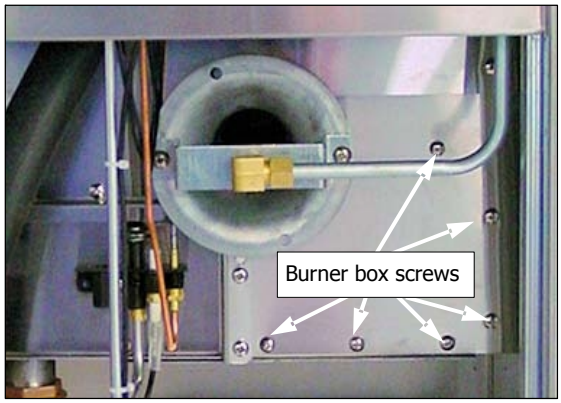


Figure 6.2.7a

6) Once the rear is supported the front can be pushed up into its location. The small notch in each side of the venturi visible externally from the burner body is for the front to back location and should be located up into the top corner panels when pushing up at the burner at front. If correctly fitted the corner support bracket securing holes. If not, check burner fit.
7) Replace brackets and all connections to the gas controls
8) Ensure underside burner box panel is refitted, as failure to refit this panel will reduce combustion and performance efficiency

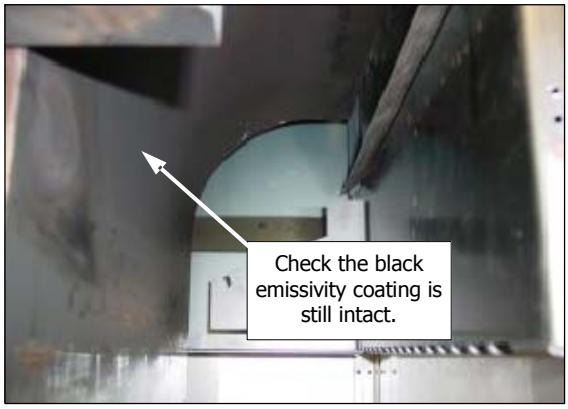


Figure 6.2.7b

© Moffat Ltd, January 2007

6.2.8 Gas control

Note: Ensure gas is isolated at main supply before any alterations are carried out on main gas controls.

1) Remove control panel (refer 6.1.1).

2) Disconnect thermocouple and pilot supply from gas control valve.

3) Undo main injector supply located at the top of the gas control valve.

4) Undo gas supply line located on bottom of gas control and remove valve.

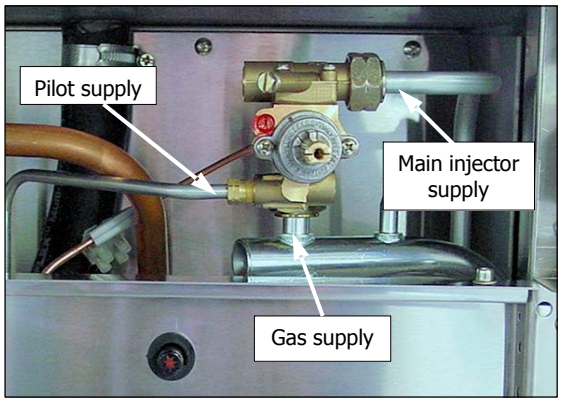


Figure 6.2.8

7) Refit by reversing the above procedure.

Note: Ensure gas thread connections are re-sealed and electrical connections secured when servicing.

6.2.9 Piezo Electrode

1) Remove nut securing piezo electrode to pilot assembly.

2) Remove piezo electrode and replace.

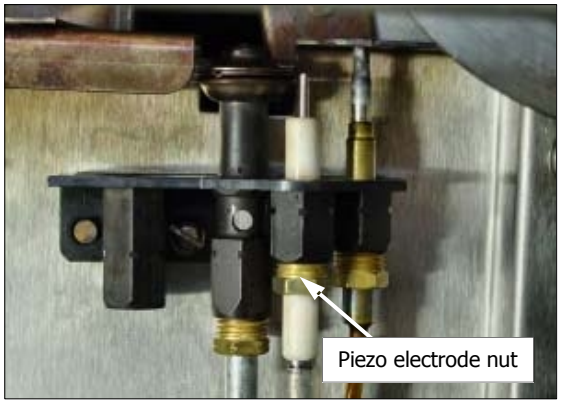


Figure 6.2.9

6.2.10 Piezo ignitor

1) Remove control panel (refer 6.1.1).

2) Remove the HT lead from the piezo ignitor by pulling firmly away.

3) Unscrew the nut securing the piezo ignitor to the control panel.

Figure 6.2.10

6.2.11 High tension Lead

1) Remove control panel (refer 6.1.1).

2) Remove H.T. lead from piezo ignitor and pilot electrode.

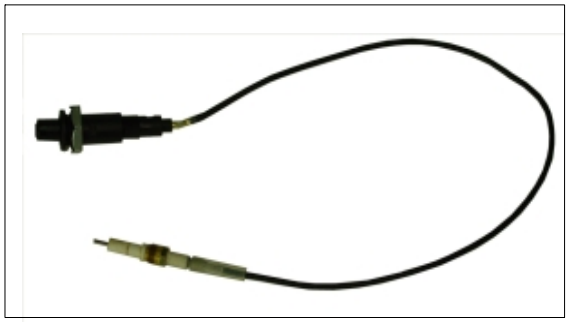


Figure 6.2.11

3) Replace lead and reassemble in reverse order.

© Moffat Ltd, January 2007

6.3 Adjustment / Calibration

6.3.1 Gas control re-greasing

1) Remove control panel (refer 5.2.1).
2) Remove 2 screws holding shaft plate to gas control body and remove control shaft and plate. Note orientation of shaft for correct re-assembly.

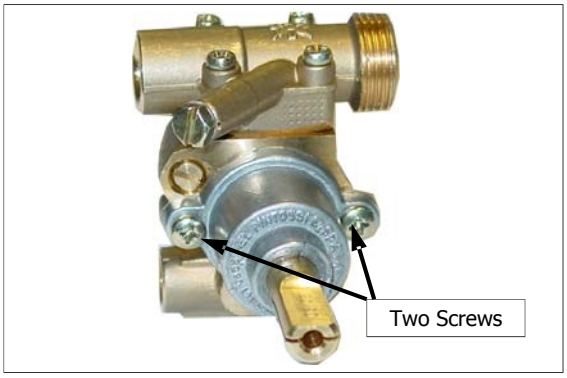


Figure 6.4.1a

3) Using needle nose pliers or similar, pull out gas control spindle, again noting its orientation.

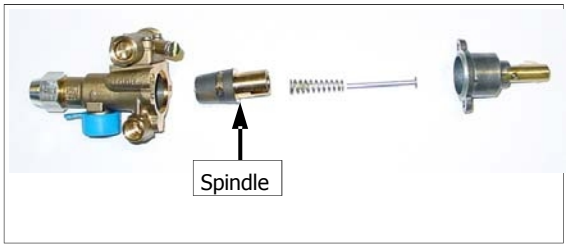


Figure 6.4.1b

4) Apply a suitable high temperature gas cock grease or lubricant such as ROCOL - A.S.P (Anti scuffing paste) / Dry Moly Paste to the outside of the spindle.
5) Replace spindle and re-assemble gas control in reverse order.

6.3.2 Low fire adjustment

1) Light burner and turn gas tap to low position.
2) Remove gas control knob.
3) Turn low fire adjustment screw, located below and to the right of the gas control shaft, until the desired low flame is achieved.

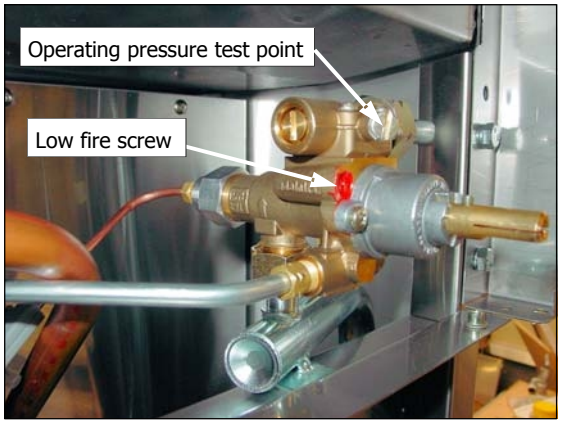


Figure 6.4.2

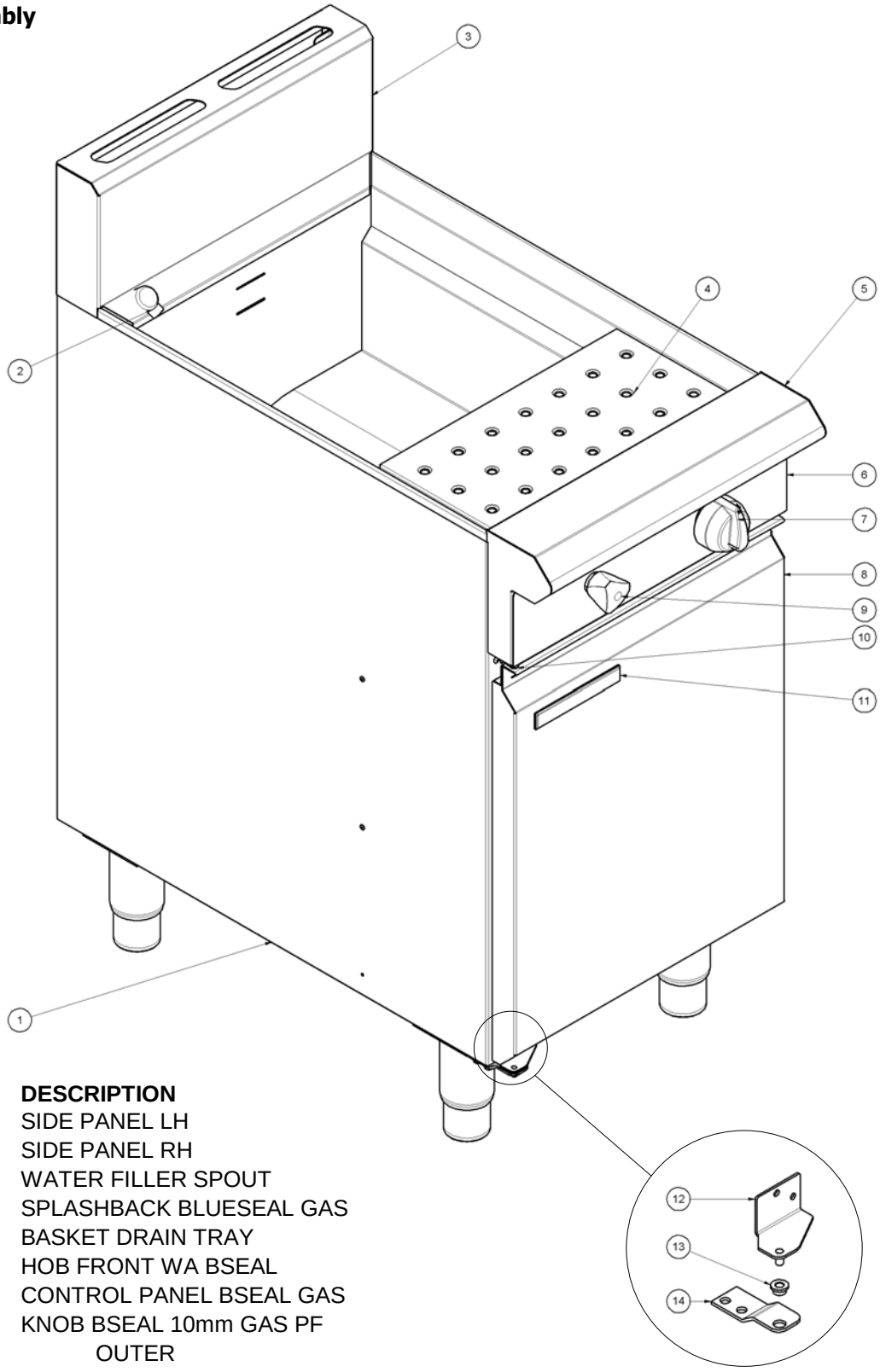
© Moffat Ltd, January 2007

7 Accessories

© Moffat Ltd, January 2007

8.1 G47

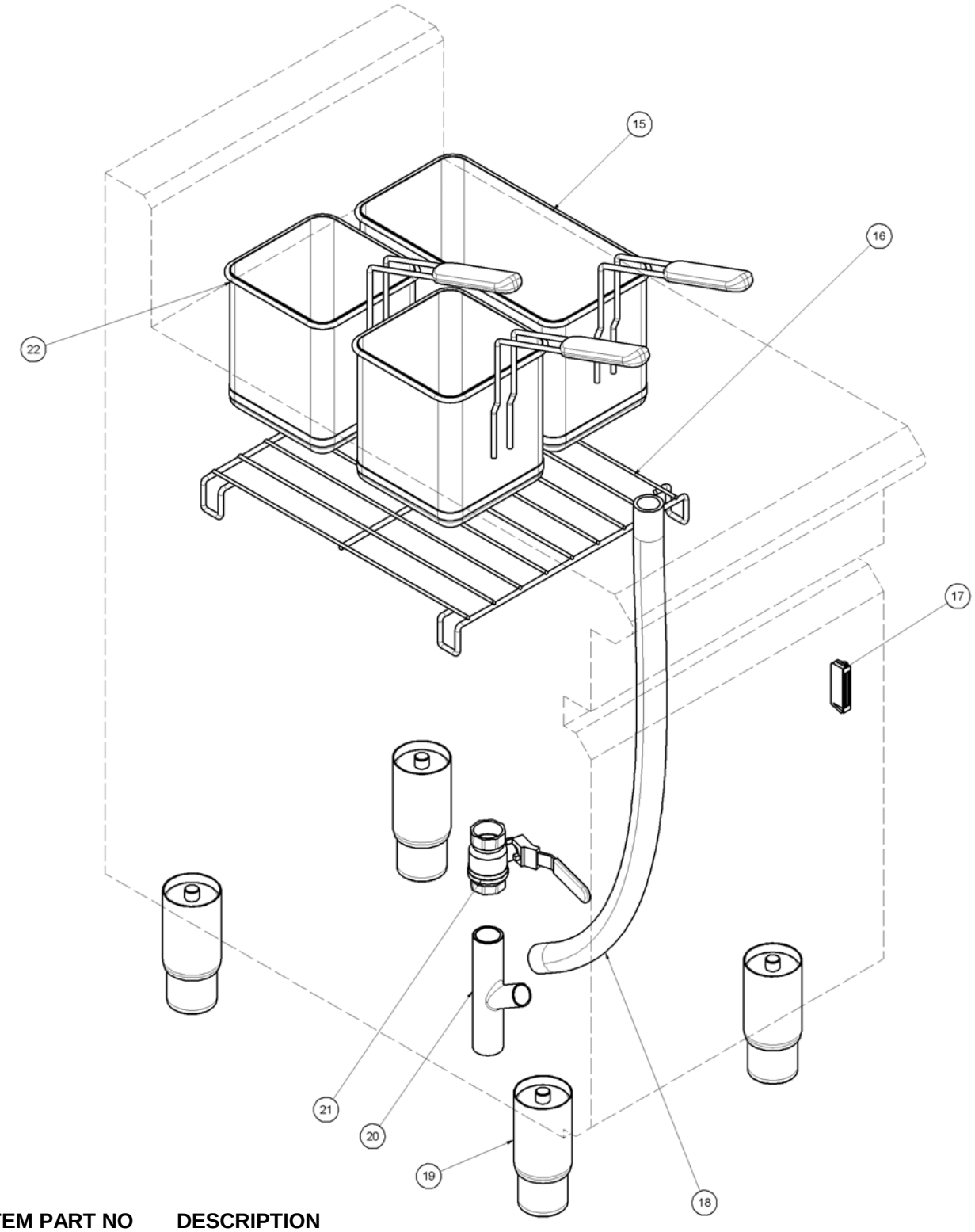
8.1.1 Main Assembly



ITEM	PART NO	DESCRIPTION
1	227512	SIDE PANEL LH
	227511	SIDE PANEL RH
2	229804	WATER FILLER SPOUT
3	229736	SPLASHBACK BLUESEAL GAS
4	229707	BASKET DRAIN TRAY
5	227762	HOB FRONT WA BSEAL
6	229745	CONTROL PANEL BSEAL GAS
7	229695	KNOB BSEAL 10mm GAS PF
8	228846	DOOR OUTER
9	229703	WATER VALVE
10	228414	TOP PIVOT STUD
11	227960	BLUE SEAL BADGE
12	228308	HINGE PIVOT WA
13	228301	HINGE BUSH
14	228300	HINGE PLATE

© Moffat Ltd, January 2007

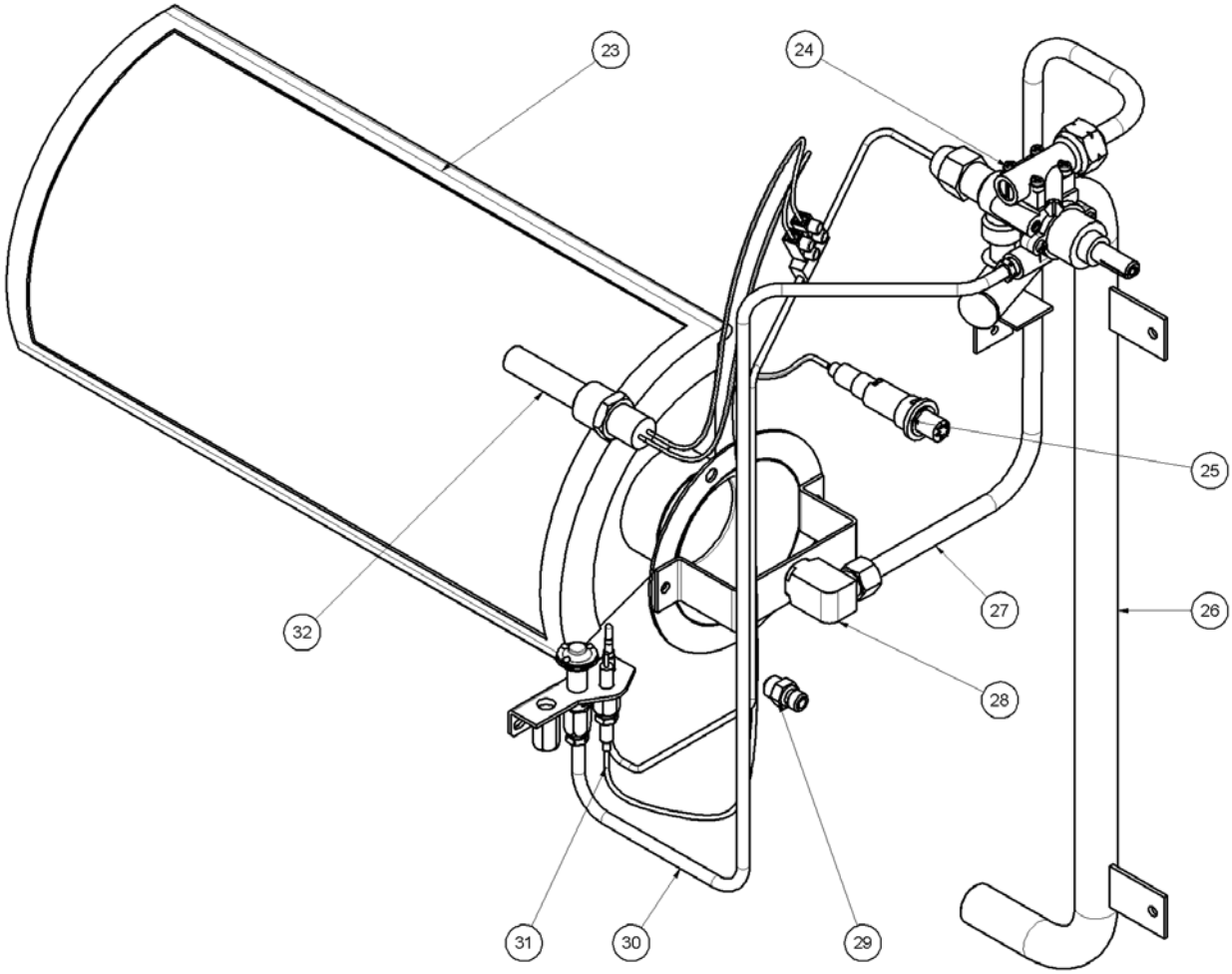
8.1.2 Main Assembly

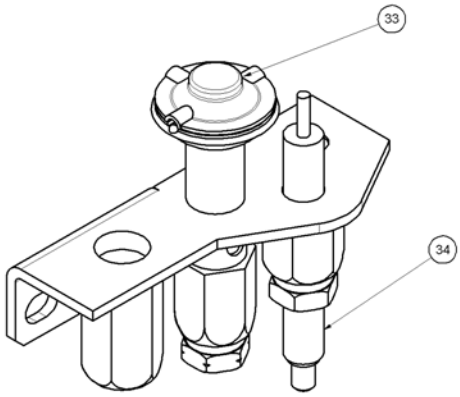


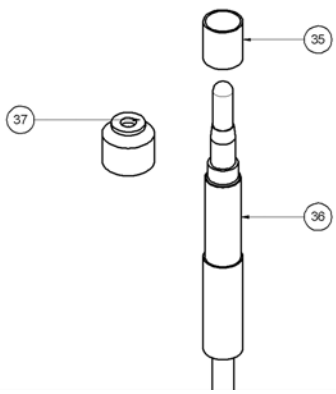
ITEM	PART NO	DESCRIPTION
15	229837	BASKET 320 X 165
16	229682	BASKET SUPPORT FRAME
17	227856	MAGNET CATCH
18	229823	OVERFLOW HOSE
19	227850	LEG 150mm
20	229822	DRAIN "Y" JUNCTION
21	019390	BALL VALVE
22	229836	BASKET 165 X 165

© Moffat Ltd, January 2007

8.1.3 Gas Assembly



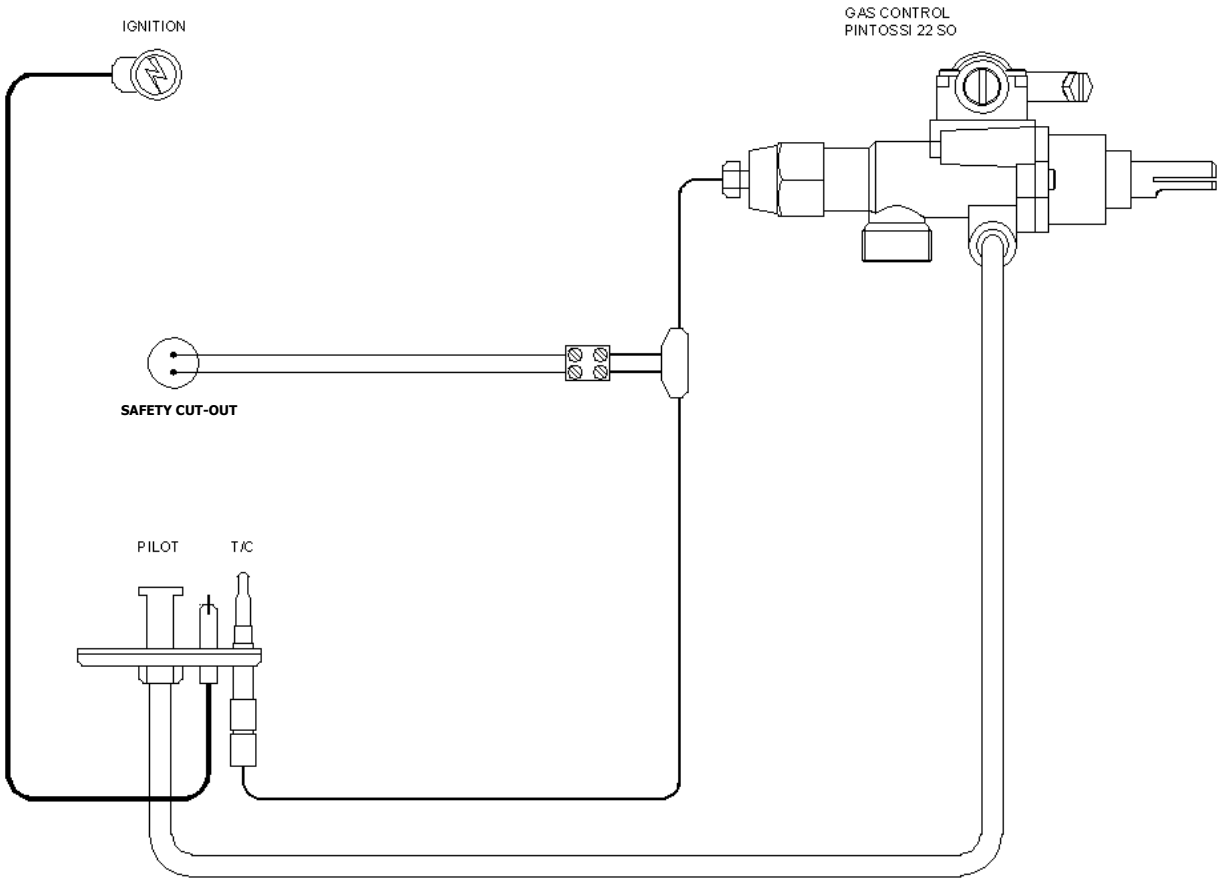




ITEM	PART NO	DESCRIPTION
23	022575	BURNER KIT
24	229699	GAS CONTROL
25	227508	PIEZO
26	229683	MANIFOLD
27	229814	BURNER SUPPLY PIPE
28	229511	INJECTOR ELBOW
29	032310	INJECTOR 3.10 mm (NAT GAS)
	032190	INJECTOR 1.90 mm (LPG/PROPANE)
30	229816	PILOT SUPPLY TUBE
31	018095	HT LEAD
32	229702	OVERTEMP
33	018744	IGNITION ELECTRODE
34	018090K	PILOT BURNER KIT
35	018743	THERMOCOUPLE SPACER
36	019218	THERMOCOUPLE
37	018091	PILOT SPUD - NAT 0.62mm
	018092	PILOT SPUD - LPG 0.35mm

© Moffat Ltd, January 2007

G47 Pasta Cooker



© Moffat Ltd, January 2007

Australia

VICTORIA - MOFFAT PTY
HEAD OFFICE AND MAIN WAREHOUSE
740 Springvale Road
Mulgrave VIC 3170
Spare Parts Department

Tel (03) 9518 3888
Fax (03) 9518 3838
Free Call 1800 337 963
Fax (03) 9518 3895

NEW SOUTH WALES - MOFFAT PTY
Unit 3/142 James Ruse Drive
Rosehill NSW 2142
Spare Parts

Tel (02) 8833 4111

Free Call 1800 337 963
Fax (03) 9518 3895

QUEENSLAND - MOFFAT PTY
30 Prosperity Place
Geebung QLD 4034
Spare Parts

Tel (07) 3630 8600

Free Call 1800 337 963
Fax (03) 9518 3895

WESTERN AUSTRALIA - MOFFAT PTY
67 Howe St
Osbourne Park, WA 6017
Spare Parts

Tel (08) 9202 6820
Fax (08) 9202 6836
Free Call 1800 337 963
Fax (03) 9518 3895

NATIONAL COVERAGE FOR 24 HOUR SERVICE OR MAINTENANCE DIAL FREE CALL 1800 622 216 (AUSTRALIA ONLY)

Canada

SERVE CANADA
22 Ashwarren Rd
Downview Fax
Ontario M3J1Z5

Tel 416-631-0601
416-631-0315

New Zealand

CHRISTCHURCH - MOFFAT LTD
16 Osborne St
PO Box 10-001
Christchurch
Spare Parts

Tel (03) 389 1007
Fax (03) 389 1276

Free Call 0800 MOFFAT
(0800 66 33 28)
Fax (03) 381 3616

AUCKLAND - MOFFAT LTD
4 Waipuna Road
Mt Wellington
Auckland
Spare Parts

Tel (09) 574 3150
Fax (09) 574 3159

Free Call 0800 MOFFAT
(0800 66 33 28)

© Moffat Ltd, January 2007

United Kingdom

Utensils Direct
0845 873 6600
www.utensilsdirect.co.uk

© Moffat Ltd, January 2007

CAUTION:

Ensure the unit is isolated from the gas supply before commencing servicing.

NOTE:

- **These conversions should only be carried out by qualified service persons. All connections must be checked for leaks before re-commissioning the appliance.**
- **For all relevant information and specifications refer to the table at the end of this section.**

1. Ensure that the gas supply has been turned off.
2. Remove the gas control knob from the gas tap spindle by pulling the knobs away from the control panel.
3. Remove the water control knob by popping out the centre of the knob and using a suitable screwdriver, unscrew the centre screw and remove the knob.
4. Open the front door, unscrew and remove the two screws on the underside of the control panel, securing the control panel to the appliance.
5. Remove the control panel from the front of the appliance.
6. Connect a manometer to the upper test point (Line Pressure) on the gas control valve. Turn on the gas and ensure that the supply pressure is within the specification shown in the 'Gas Specifications Table' at the end of this section.

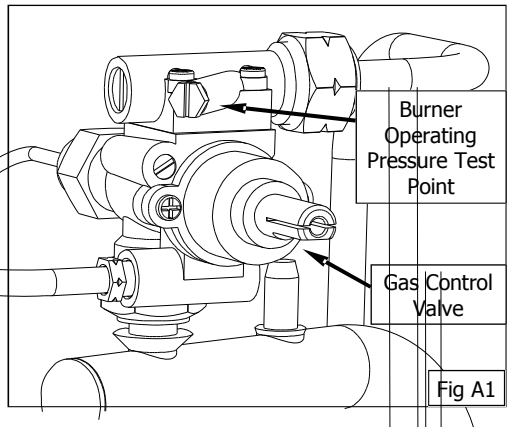


Fig A1

Main Burner Injectors

1. Unscrew and remove the main burner injectors (12.7 mm A/F) located in front of main burner venturi openings.
2. Determine the correct injectors for the corresponding gas from the 'Gas Specifications Table' at the end of this section.
3. Screw in the correct sized injectors. Refer to the 'Gas Specifications Table' at the end of this section.

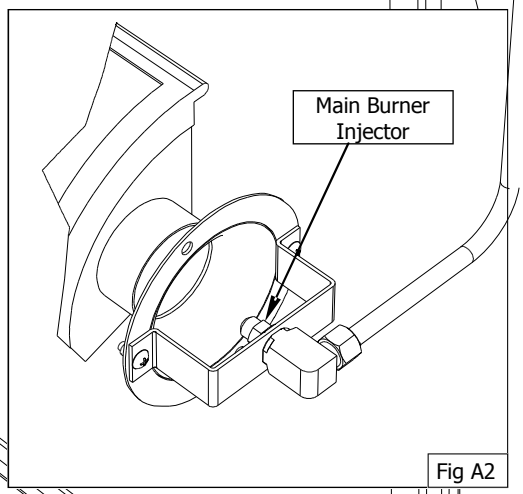


Fig A2

Pilot Burner Injectors

1. Unscrew the pilot supply tube from the pilot burner fitted to the mounting bracket and remove the pilot injector.

NOTE: On appliances fitted with piezo igniter electrodes, to prevent damage to the electrode, unscrew and remove the electrode from the mounting bracket before unscrewing the pilot supply tube.

2. Determine the correct sized pilot injectors for the corresponding gas from the table overleaf.
3. Fit the correct sized injector into the pilot burner and re-connect the gas supply tube to the pilot burner.
4. Refit the piezo igniter electrode to the mounting bracket and tighten hand tight.

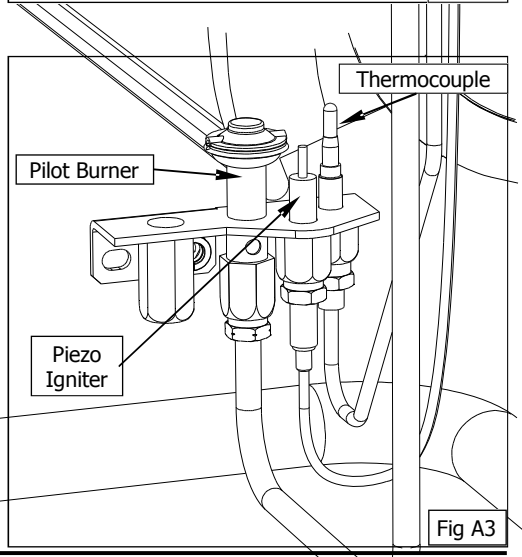


Fig A3

© Moffat Ltd, January 2007

Low Fire Adjustment

a. To adjust the burner low fire adjustment, adjust the low fire adjustment screw on the open burner gas control valves to obtain the desired flame size.

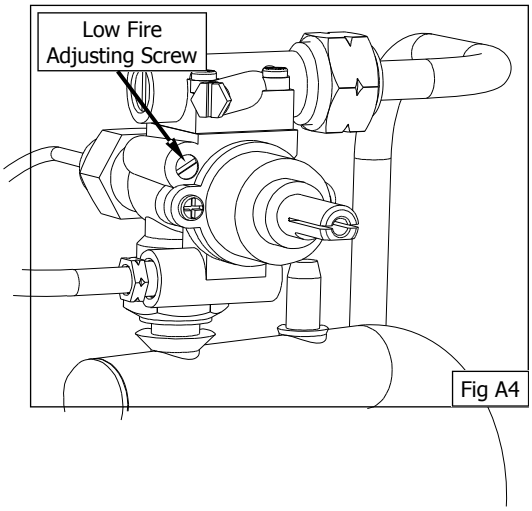


Fig A4

NOTE: The "Low Fire Screw" should be sealed with coloured paint on completion of the low fire adjustment.

On completion of the main and pilot burner adjustments, check all gas connections for leakages and then turn off the main burners at the gas control knob. Turn off the main gas supply. Refit all the panels and control knobs to the appliance.

Gas Regulator

NOTE: The regulator supplied is convertible between Natural Gas and LPG, but it's outlet pressure is fixed ex-factory and is NOT to be adjusted.

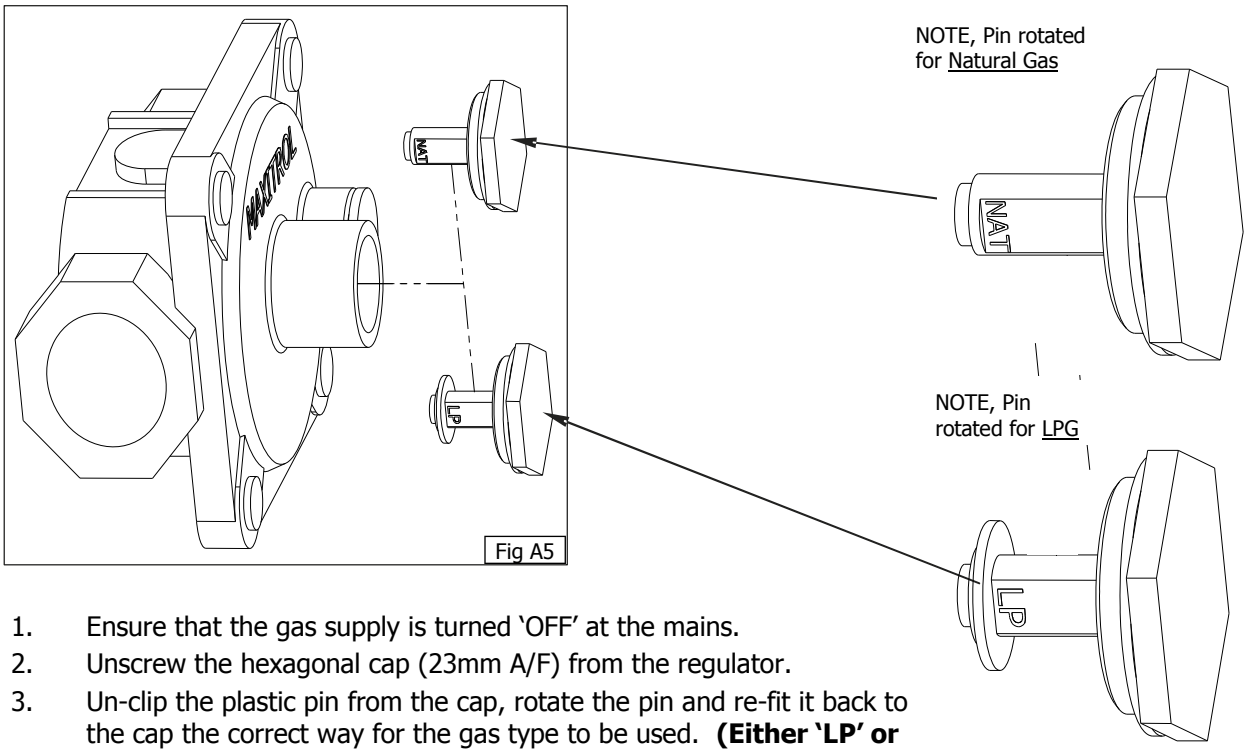


Fig A5

1. Ensure that the gas supply is turned 'OFF' at the mains.
2. Unscrew the hexagonal cap (23mm A/F) from the regulator.
3. Un-clip the plastic pin from the cap, rotate the pin and re-fit it back to the cap the correct way for the gas type to be used. **(Either 'LP' or 'NAT' should be visible on the flank of the pin once re-fitted to the cap)**.
4. Screw the cap back into the regulator.

Gas Type Identification Label

On completion of the gas conversion, replace the gas type identification label located at:-

- The rear of the appliance, above the gas connection.
- Beside the rating plate.

© Moffat Ltd, January 2007

Commissioning

Before leaving the converted installation;

1. Check all gas connections for leakages using soapy water or other gas detecting equipment.

WARNING:

DO NOT USE A NAKED FLAME TO CHECK FOR GAS LEAKAGES.

2. Check the following functions in accordance with the operating instructions specified in the "Operation" section of the User manual.
    - Light the Pilot Burners.
    - Light the Main Burners.
    - Check the Thermostat operation.
    - Ensure that all the controls operate correctly.

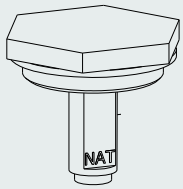
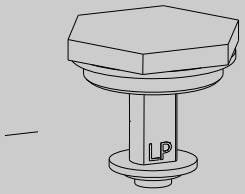
NOTE: If for some reason it is not possible to get the appliance to operate correctly, shut off the gas supply and contact the supplier of this appliance.

© Moffat Ltd, January 2007

B Appendix B: Gas Specifications

Gas Specifications

- Non - UK Only:

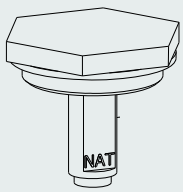
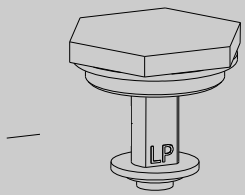
	Natural Gas.	LP Gas (Propane)
Main Burner Injectors	Ø 3.10 mm	Ø 1.90 mm
Pilot Burner Injectors	0.62	0.35
Low Fire Screw	Ø 1.55 mm 2 turns out (c.c.w.)	Ø 1.55 mm Fully In (c.w.)
High Fire Screw	Fully Out (c.c.w.)	Fully Out (c.c.w.)
Supply Pressure	1.13 - 3.40 kPa	2.75 - 3.40 kPa
Burner Operating Pressure	0.92 kPa (*)	2.6 kPa (*)
Gas Regulator Cap Screw		

- UK Only:

Appliance Classification

Category: $\mathbf{II_{2H3P.}}$

Flue Type: $\mathbf{A_{1.}}$

	Natural Gas (G20)	Propane (G31)
Main Burner Injectors	Ø 3.10 mm	Ø 1.90 mm
Pilot Burner Injectors	0.62	0.35
Low Fire Screw	Ø 1.55 mm 2 turns out (c.c.w.)	Ø 1.55 mm Fully In (c.w.)
High Fire Screw	Fully Out (c.c.w.)	Fully Out (c.c.w.)
Supply Pressure	20 mbar	37 mbar
Burner Operating Pressure	9.5 mbar (*)	27.7 mbar (*)
Gas Regulator Cap Screw		

NOTE: (*) The burner operating pressure is to be measured at the Burner Operating Pressure test point on the gas control valve, this is to be carried out with the burner operating at the 'High Flame' setting. The operating pressure is ex-factory set, through the appliance regulator and not to be adjusted, apart from when carrying out gas conversion, if required. Refer to the 'Gas Conversion and Specification' Section for further details.

© Moffat Ltd, January 2007